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ORA-00845: MEMORY_TARGET not supported on this system

26. OCTOBER 2012, BY SIMON KRENGER

There is always something that gets in the way. One problem I regularly stumble upon when installing a new Oracle 11g R2 installation is the following error when I try to start the database:

```
SQL> startup nomount;
ORA-00845: MEMORY_TARGET not supported on this system
```

So I keep this post mainly for my own reference when installing a new database on a Linux system.

This error comes up because you tried to use the **Automatic Memory Management (AMM) feature** of Oracle 11g R2. Well done, but it seems that your shared memory filesystem (shmfs) is not big enough. So let's look at the steps necessary to enlarge your shared memory filesystem to avoid the error above.

First of all, login as root and have a look at the filesystem:

```
[root@oracle-em oracle]# df -h
Filesystem              Size  Used Avail Use% Mounted on
/dev/mapper/vg_oracleem-lv_root
                         93G   19G   69G  22% /
tmpfs                   5.9G  112K  5.9G   1% /dev/shm
/dev/sda1               485M   99M  362M  22% /boot
```

So we can see that `tmpfs` has a size of 6GB. We can **change the size of that filesystem** by issuing the following command (where "12g" is the size I want for my MEMORY_TARGET):

```
[root@oracle-em oracle]# mount -t tmpfs shmfs -o size=12g /dev/shm
```

This command (re)mounts the shmfs filesystem (check this post for more information about shmfs) with the option "`size=12g`".

The shared memory file system should be big enough to accommodate the `MEMORY_TARGET` and `MEMORY_MAX_TARGET` values, or Oracle will throw the ORA-00845 error. Note that when changing something with the `mount` command, the **changes are not permanent**.

To make the change persistent, edit your `/etc/fstab` file to include the option you specified above:

```
[root@oracle-em ~]# cat /etc/fstab
[..]
tmpfs                   /dev/shm                tmpfs  size=12g       0 0
[..]
```

In my case, I replaced the "defaults" option with the `size=12g` option. After saving the file, the changes should be permanent. Now back to Oracle. Let's see if we can start the database now…

```
SQL> startup nomount
ORACLE instance started.

Total System Global Area 1.1758E+10 bytes
Fixed Size                  2239056 bytes
Variable Size            5939135920 bytes
Database Buffers         5804916736 bytes
Redo Buffers               12128256 bytes
```

Bingo! Now go and enjoy your automatically managed memory configuration!

TAGS: AUTOMATIC MEMORY MANAGEMENT, DATABASE, INSTALLATION, LINUX, ORA-00845, ORACLE 11G, ORACLE DATABASE, RED HAT ENTERPRISE LINUX, SHARED MEMORY, TROUBLESHOOTING

NICK (NOVEMBER 26, 2012):

My /dev/shm is tmpfs 12G 4.6G 7.3G 39% /dev/shm and I am having this issue. What else could I do to fix this issue?

Thanks, Nick

SIMON KRENGER (NOVEMBER 28, 2012):

Oracle Support notes that there can be multiple reasons for this error:

- /dev/shm is sized too small (see article on how to fix this). Make sure the instance can allocate the amount of memory it needs and no other instances on the box use memory from /dev/shm
- /dev/shm is not properly mounted, but that does not seem to be the case here (df should return correct values)

DIRK DOLLÉ (JANUARY 10, 2013):

Thanks, it worked fine for me.

PUSHPENDRA (JANUARY 28, 2013):

really it worked fine.thanx.

PRITHIV (MARCH 11, 2013):

nice one..gud work..thanks

JATIN (MARCH 12, 2013):

Thanks a lot.. Really thank you for such perfect resolution.

AMING (MARCH 18, 2013):

thank you verry much. I just have the problem under centos 6.3 x86_64 and the solution has fixed my problem.

JASWINDER (APRIL 1, 2013):

I have few queries related to your workaround mentioned in this post:

1. I would like to have more info on shmfs (what does it refer to and its significance)
2. Why 12g is good (reason for this specific size allocation) and its relation to MEMORY_TARGET
3. Startup nomount does not actually start the database (any info…?)

Thanks

SIMON KRENGER (APRIL 2, 2013):

Hello, thank you very much for your questions, I am happy to answer them for you:

1. You can find more information about tmpfs/shmfs in the Linux kernel sources
2. 12g is a size appropriate for my database. For your database this should reflect the amount of memory you want to allocate for your database!
3. No, NOMOUNT does not start the database, but is used here because you usually hit this error when setting up a database, therefore before issuing CREATE DATABASE. Read up on the startup process in the Oracle database.

JASWINDER (APRIL 3, 2013):

Thanks Simon…I am pleased to get that piece of information…!!!

MARIO (MAY 3, 2013):

Thank's, It's a very helpful information, I'ts works for my.

UZZAL BASAK (JUNE 26, 2013):

Nice job Simon.. Thanks a lot Simon.

JOHN MCCANE (JULY 7, 2013):

Spot on this worked for me. Thanks very much for the blog.

John

MOHAN (AUGUST 8, 2013):

Great tip, saved the day. Thks

SANDEEP SINGLA (AUGUST 22, 2013):

Thankyou very much for this information.

PRAKASH (SEPTEMBER 20, 2013):

Thank you very much for this solution. It worked for me perfectly, much appreciated.

OMER (OCTOBER 24, 2013):

Thankyou so much. it worked for me.

MAZHAR (OCTOBER 31, 2013):

Thanks. worked for me :-)

DAYWALKER (NOVEMBER 11, 2013):

this worked, thanks !
I had to do the following to change the size on the fly:

mount -t tmpfs shmfs -o size=12g,remount /dev/shm

ANIKET KHISMATRAO (NOVEMBER 13, 2013):

SQL> startup
ORACLE instance started.

Total System Global Area 422670336 bytes
Fixed Size 1336960 bytes
Variable Size 260049280 bytes
Database Buffers 155189248 bytes
Redo Buffers 6094848 bytes
ORA-01102: cannot mount database in EXCLUSIVE mode

SIMON KRENGER (NOVEMBER 13, 2013):

Hello Aniket,
It seems that you have some other problem going on. I would like to refer you to MOS Note 160395.1. Try to kill all database processes (get them with "ps -ef | grep $ORACLE_SID") and then retry to start the database. All the best, Simon

SHAKTI (NOVEMBER 16, 2013):

thanx

MOATH (JANUARY 14, 2014):

Many Thanks!

ANOOP (FEBRUARY 28, 2014):

Thanks a lot

SRIKANTH (MARCH 14, 2014):

excellent option using this I installed 2 databases on one server

thanks you so much

SUNIL (MARCH 25, 2014):

Thanks Bro
It was really helpful , so simple and easy.

Thanks a lots.
Hv a nice day

AQEEL (APRIL 4, 2014):

I have encountered the similar error while installing Oracle 11gR2. This article really helped.

JOHN (APRIL 10, 2014):

great it works, thanks a lot

PETER (APRIL 15, 2014):

Thanks a lot, this saved a lot of time!

RUSSEL (APRIL 26, 2014):

thanks a lot. i solved it

PINAKI (APRIL 30, 2014):

Hi,

Wanted to have clarification on the space needed for /dev/shm mapped as tmpfs.

Exa :

I have three instances hosted on one server having below memory targets.

Instance X memory target: 40g
Instance Y memory target: 30G
Instance Z memory target: 20G

Available physical memory is 120gb.

So should i allocate 90g space to /tmpfs to host these three instances ?

Thanks,
Pinaki

SIMON KRENGER (MAY 1, 2014):

Hello Pinaki,

Yes, exactly. And unless you are also running an application server on the machine, consider allocating more than 90G for the databases. The reason for this is that the filesystem cache is useless for databases, as the database caches the blocks itself.

Also consider using a large MEMORY_MAX_TARGET for all three databases (e.g. 50G for all databases) and setting MEMORY_TARGET to the values you mentioned above. This way, you can dynamically allocate memory during runtime, which is kinda handy.

FRANK (MAY 2, 2014):

Worked for me. Thanks. Centos 6.5 & 11G.

JUVE (OCTOBER 21, 2014):

Thanks Indeed,the solution as work very big.!!!

BR (DECEMBER 31, 2014):

Thanks SOOOOO much!! Worked for me too!!

ANANDH (JUNE 24, 2015):

Wow!! Thanks a lot. It worked for me.

SHIVA (JULY 23, 2015):

A very nice article.

But,server hanged when I update update /etc/fstab

When removed /dev/shm from /etc/fstab
It worked for me in 11.2.0.3.0
Red Hat Enterprise Linux Server release 6.4 (Santiago)

for more information, please refer to (scroll down to check option 2)
http://dbakumar.blogspot.sg/p/startup-failure-ora-00845-memorytarget.html

GENE HEPTONSTALL (SEPTEMBER 15, 2015):

Hi Simon,

Up how high is it safe to increase the tmpfs? When I check free -t -m I have the following:

```
                total      used      free     shared    buffers     cached
Mem:             6971      5400      1570          0        345       3283
-/+ buffers/cache:         1772      5198
Swap:           11999       391     11608
Total:          18971      5792     13178
```

My current df -h shows this value for /dev/shm:

tmpfs 4.0G 1.8G 2.3G 43% /dev/shm

Is it safe to increase the size of tmpfs up to 12G on this setup?

Regards,
Gene

SIMON KRENGER (SEPTEMBER 15, 2015):

Hello Gene,
I would not increase tmpfs to a value that is larger than your available physical RAM.

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